

Work Order ID 142431

March 09, 2016 8:45:10 AM

142431

Page 1

Item ID: D3564-9 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Wearplate Fwd
Start Date: 3/11/2016 Start Qty: 20.00 ***20*** Cust Item ID:
Required Date: 3/18/2016 Req'd Qty: 20.00 ***20*** Customer:
Reference:

Approvals: Process Plan: SH Date: 201603 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3564	D								

100 FLOW WATER JET 0.00
100
Waterjet Memo 0.07 (26) 26 26/03/09
FLOW CNC Waterjet 1-Cut as per Dwg D3564 ***** (D3564-1F) ***** Dwg Rev: D Prog
Rev: D 2-Deburr if necessary

110 QC2- Inspect parts off machine FAI/FAIB 0.00
110
QC Memo 0.00 (26) 26 26/03/09
Quality Control

120 QC8- Inspect parts - second check 0.00
120
QC Memo 0.01 (26) 26 26/03/09
Quality Control

DAS
38
9-88

MAR 10 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐			
Design ☐	☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐			
Doc/Data ☐	☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐			
Equip/Tooling ☐	☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐			
Handling/Pre ☐	☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐			
Material ☐	☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐			
Internal Transport ☐	☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐			
Tribal Knowledge ☐	☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐			
LOA ☐	☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐			
Substation ☐	☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐			
Past Expiry Date ☐	☐	Manufacturing Process ☐							
Misidentified ☐	☐	Past Due ☐	OTHER :						

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

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142431

Page 3

Item ID: D3564-9 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Wearplate Fwd
Start Date: 3/11/2016 Start Qty: 20.00 ***20*** Cust Item ID:
Required Date: 3/18/2016 Req'd Qty: 20.00 ***20*** Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* QC Quality Control	QC10- Inspect visual per QSI004- ground welds Memo	0.00 0.00				(26)			DAS 38 9-89 MAR 17 2016
170 *170* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.01				(26)			DAS 38 9-89 MAR 17 2016
180 *180* Powdercoat Powder Coating	Grey Sandtex (Ref: 4.3.5.6) per QSI005 4.3 M 130746 Memo START TIME: <u>3:40.</u> OVEN TEMPERATURE: <u>320°</u> FINISH TIME: <u>4:10.</u>	0.00 0.01				26	16-03-17	38	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐			
Design ☐	☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐			
Doc/Data ☐	☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐			
Equip/Tooling ☐	☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐			
Handling/Pre ☐	☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐			
Material ☐	☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐			
Internal Transport ☐	☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐			
Tribal Knowledge ☐	☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐			
LOA ☐	☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐			
Substation ☐	☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐			
Past Expiry Date ☐	☐	Manufacturing Process ☐	OTHER : _____						
Misidentified ☐	☐	Past Due ☐							

Work Order ID 142431

March 09, 2016 8:45:10 AM

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Page 4

Item ID: D3564-9 Accept ***N900040100*** Setup Start ***NS1***
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Item Name: Wearplate Fwd
Start Date: 3/11/2016 Start Qty: 20.00 ***20*** Cust Item ID:
Required Date: 3/18/2016 Req'd Qty: 20.00 ***20*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC3- Inspect Part Finish	0.00							
190									
QC	Memo	0.00							DAS 38 9-88
Quality Control									MAR 18 2016
200	Identify as per dwg & Stock Location: <u>FP-002</u>	0.00							
200									
Packaging	Memo	0.00							
Packaging	LOCATION : FP002								
210	QC21- Final Inspection - Work Order Release	0.00							
210									
QC	Memo	0.03							
Quality Control									MAR 18 2016

MCS MAR 18 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

March 09, 2016 8:45:18 AM

Page 1

Work Order ID: 142431

142431

Parent Item: D3564-9

D3564-9

Parent Item Name: Wearplate Fwd

Start Date: 3/11/2016

Required Date: 3/18/2016

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP Rev:A New Issue 07-03-08 ec
 IPP Rev:B As per Rev C 07-07-09 JLM
 IPP Rev:C As per Rev D 07-09-09 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M304S16GA		Purchased	No			100	sf	167.1090	1.41	29.68421			
-----------	--	-----------	----	--	--	-----	----	----------	------	----------	--	--	--

M304S16GA

304/316 Sheet .063

26/03/16

Location

Loc Qty

Loc Code

MAT019

167.109

m134067

8.006

m134158

95.103

m134399

64

26.5

DART AEROSPACE LTD		Work Order:	142431
Description: Wearshoe		Part Number:	D3564-9
Inspection Dwg: D3564 Rev: D		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

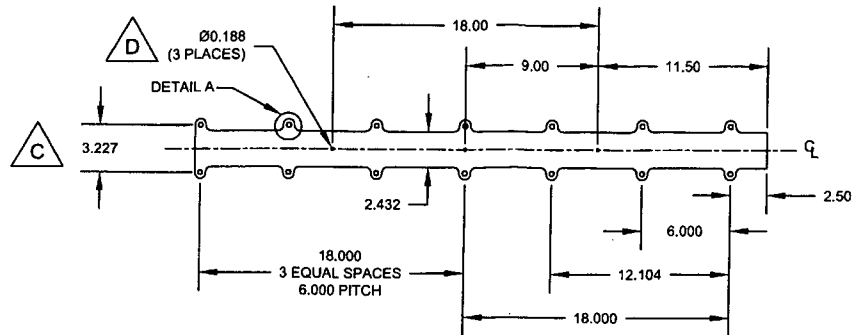
☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
3.227	+/-0.010	3.223	/		Viper-02	
2.432	+/-0.010	2.439	/		Viper-01	
2.50	+/-0.030	2.50	/		Tape	
6.000	+/-0.010	6.000	/			
12.104	+/-0.010	12.104	/			
18.000	+/-0.010	18.000	/			
18.000	+/-0.010	18.000	/			
18.00	+/-0.030	18.00	/			
9.00	+/-0.030	9.00	/			
11.50	+/-0.030	11.50	/			
0.300 x 0.300	+/-0.010	.304 x .303	/			
Ø0.188	+0.005/-0.001	Ø.188	/			
R0.375	+/-0.010	.375	/			
0.063	+/-0.010	.057	/			

Measured by:	pc	Audited by:	DAS 38	Prototype Approval:	N/A
Date:	16/03/07	Date:	MAR 10 2016	Date:	N/A

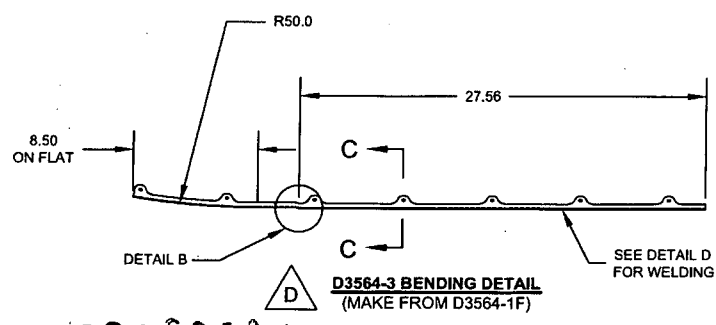
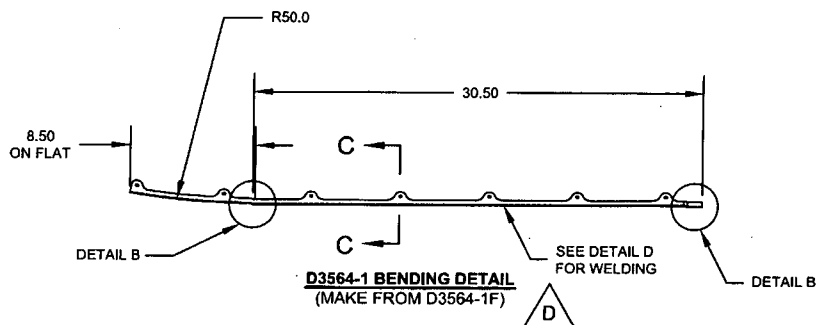
Rev	Date	Change	Revised by	Approved
A	08.01.16	New Issue	KJ/EC/DD	

8 7 6 5 4 3 2 1



D3564-1F FLAT PATTERN

RELEASED
07.09.04



UNDER REVIEW
11/10/04
Frost change
OK 11/11/04

20160301
SA
142431

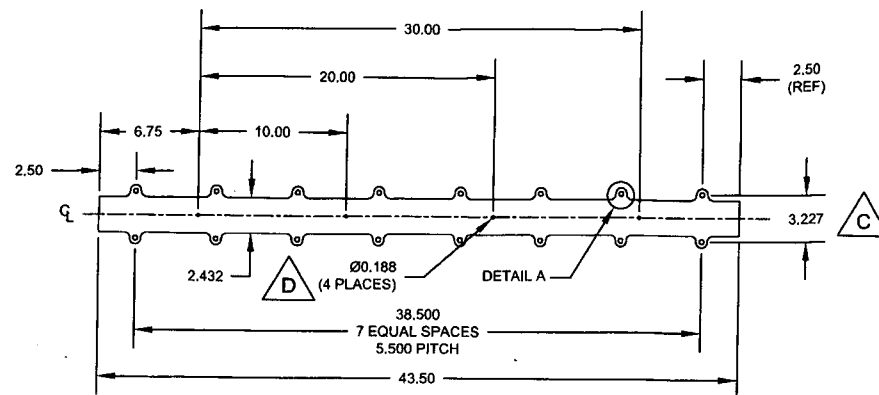
D3564-1/-3/-5/-7/-9/-11/-13/-15 WEARPLATE NOTES:

- 1) MATERIAL: AISI 304/316 SS SHEET PER AMS 5513 OR AMS 5524, 16 GAUGE (0.063 THICK) (REF DART MATERIAL SPEC M304S16GA)
- 2) FINISH: POWDER COAT GREY SANDEX (REF 4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: SEE TABLE IN ZONE A3
- 8) WELD PER DART QSI 004
- 9) SEE PG 3 FOR SECTIONS AND DETAILS
- 10) PARTS ARE SYMMETRIC ABOUT C

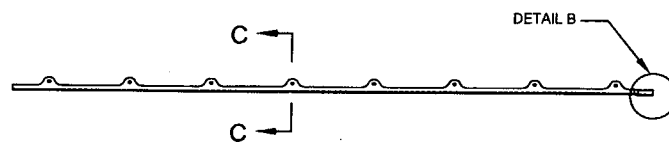
WEIGHTS:	
D3564-1	1.85 lbs
D3564-3	1.85 lbs
D3564-5	1.93 lbs
D3564-7	1.26 lbs
D3564-9	1.85 lbs
D3564-11	1.85 lbs
D3564-13	0.38 lbs
D3564-15	0.80 lbs

D	UPDATE DRAWING TEMPLATE; CHANGE ALL (TYP X PLS) TO (X PLACES); PG1 A8: UPDATE NOTES; PG1 A8, PG3 B5,C5: ADD D3564-15; PG1 B6,B3: D3564-1/-3 WAS ONE FIGURE; PG2 A7,A3: D3564-9/-11 WAS ONE FIGURE; PG2 A7,A3: D3564-9/-11 WAS ON PG1; PG3 B8,C8: D3564-13 WAS ON PG2; PG3 D2: WELDING DETAIL WAS ON PG1 PG3 A5,7,B2: RELOCATE DETAILS AND SECTION; PG3 A5,7,B2: INCREASE DETAIL AND SECTION SIZE	CB	07.08.21
C	MOVE TAB OUTBOARD, DETAIL A	PH	07.04.17
B	ADD AMS 5513 AND AMS 5524	PH	07.03.20
A	NEW ISSUE	PH	06.12.18
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD	
DRAWN	CB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PH	DRAWING NO.	REV. D
MFG. APPR.	PH	D3564	SHEET 1 OF 3
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	WEARSHOE	1:8
DATE	07.08.21	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

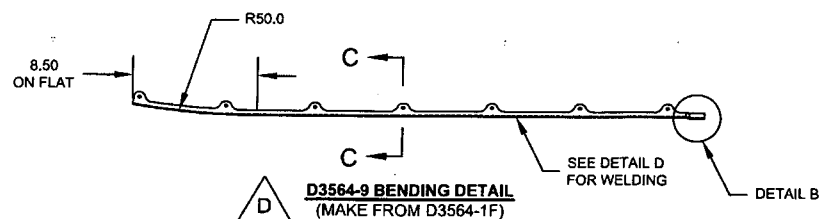
8 7 6 5 4 3 2 1



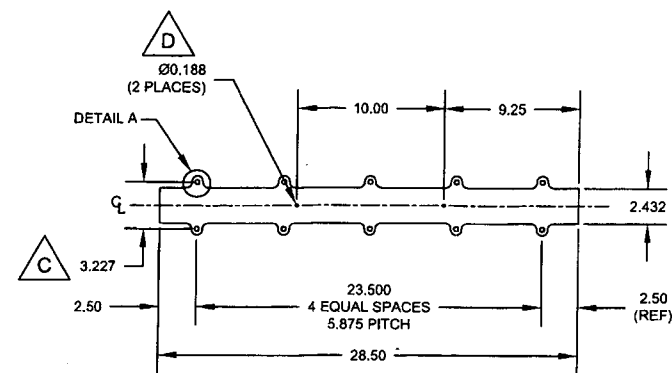
D3564-5F FLAT PATTERN



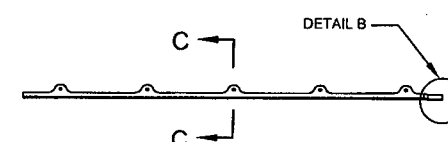
D3564-5 BENDING DETAIL
(MAKE D3564-5 FROM D3564-5F)



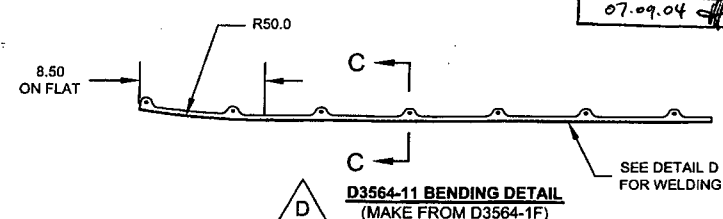
D3564-9 BENDING DETAIL
(MAKE FROM D3564-1F)



D3564-7F FLAT PATTERN



D3564-7 BENDING DETAIL
(MAKE D3564-7 FROM D3564-7F)



D3564-11 BENDING DETAIL
(MAKE FROM D3564-1F)

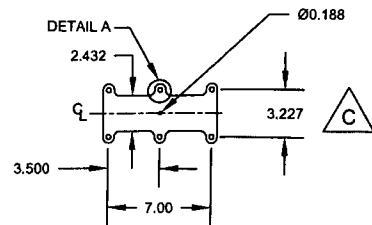
UNDER REVIEW
OK CP 11/1/28

RELEASED
07.09.04

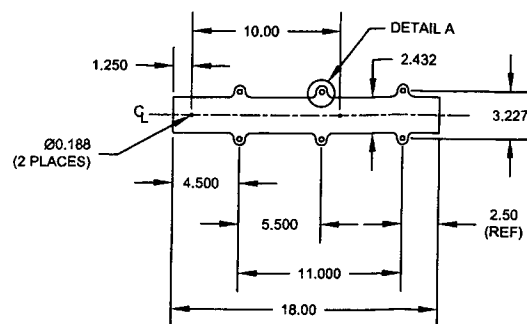
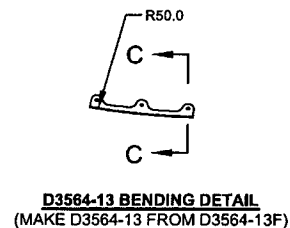
DESIGN	PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	CB		
CHECKED	PH	DRAWING NO.	REV. D
MFG. APPR.	PH	D3564	SHEET 2 OF 3
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	WEARSHOE	1:8
DATE	07.08.21	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

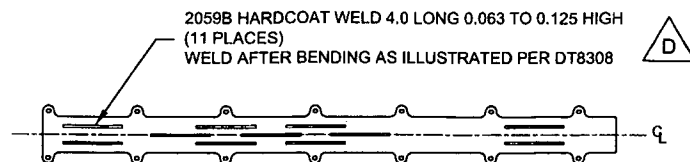
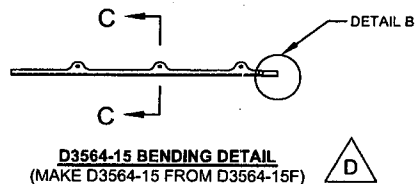
8 7 6 5 4 3 2 1



D3564-13F FLAT PATTERN

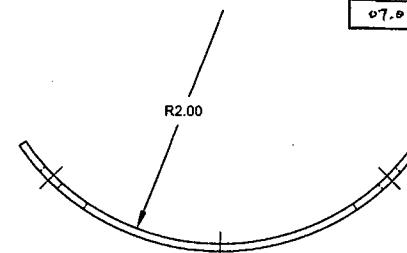


D3564-15F FLAT PATTERN

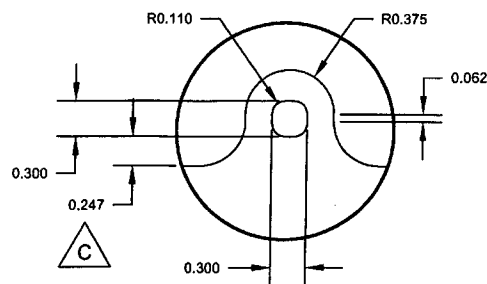


DETAIL D
(D3564-1/-3/-9/-11 WELDING DETAIL)

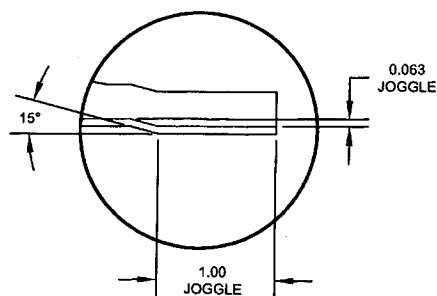
RELEASED
07.09.04



SECTION C-C
SCALE 1:1



DETAIL A
SCALE 1:1



DETAIL B
SCALE 1:1

UNDER REVIEW
07.11.28

DESIGN	AY	DART AEROSPACE LTD	
DRAWN	CB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AY	DRAWING NO.	REV. D
MFG. APPR.	AY	D3564	SHEET 3 OF 3
APPROVED	AY	TITLE	SCALE
DE APPR.	AY	WEARSHOE	1:8
DATE	07.08.21	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	